REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claim 1 has been amended to recite that the chain is provided over pulleys having sheave faces with conical surface shapes. Basis for this is found in the paragraph bridging pp. 12-13. The engagement of chains with such pulley triggers "polygonal vibrations" due to the rise and fall of the pins when they initially "bite" on the circular surface of the pulley. That is, the pins repeatedly move downward at, and just before, a biting position where the pins move from a linear part to a circular part contacting the pulley, to create the polygonal vibrations. See Fig. 5 and p. 18, lines 1-15. This has also been recited in the claims.

According to a feature of the invention, the resonance caused by such polygonal vibration is reduced by the features of the invention, these features including randomly arranging at least two kinds of sets of pins in which loci of rolling contact movement of a first pin and a second pin are different, wherein the locus of a contact position of the first pin and the second pin is an involute of a circle, and a basic circle radius of an involute of the one of said two kinds of sets of pins is larger than a basic circle radius of an involute of the another of said two kinds of sets of pins. Basis for this is found in the specification from line 16 of page 18 to line 13 of page 19.

Claims 1-4 and 6 were rejected under 35 U.S.C. §103 as being obvious over Kanehira et al in view of newly cited U.S. patent 1,651,832 (Morse).

Applicants had previously argued that Kanehira et al does not teach a power transmission chain in which the locus of a contact position of the pins in a pin joint is an involute of a circle, and does not vary the basic circle radii. Kanehira et al instead varies the joint pitches P to reduce noise by randomly arranging rocker joint pin pairs having arcuate pins of different thicknesses. The outstanding Office Action recognized this failure of Kanehira et al (p. 3, lines 16-19) but considered the differences to have been obvious in view

of Morse. According to the Office Action, Morse "teaches a locus of a contact positions (sic) ... is an involute of a circle, and a basic circle radius of an involute of the one ... of said two kinds of sets of pins is larger than a basic circle radius of an involute of the other ... of said two kinds of sets of pins." This is respectfully traversed.

Morse discloses a drive chain in which two kinds of sets of pins: 9 and 12, and 10 and 13, having different amounts of friction are alternately arranged to break up vibrations (p. 1, lines 71-76). In particular, the pin 10 is *circular* and the mating pin 13 is circular arcuate, whereby these pins apparently mutually slide at their mating circular contacting surfaces to form a "bush type" joint. The pin 9 has a *flat* contacting surface and the mating pin 12 has two flat or slightly arcuate surfaces which are angularly offset, whereby the pin 12 can rock on the flat pin 9 to form a "rocker type" joint exhibiting less friction than the bush type joint.

In no case, however, is any of the contact surfaces in the pins of Morse "an involute of a circle." Indeed, the circular pins 10 and 13 do not even "move relatively in a *rolling* and contacting manner" but instead simply slide in a bushing type joint. Further, the alternating types of sets of pins of Morse do not reduce resonance caused by polygonal vibration, but instead break up vibrations due to their different frictional characteristics.

Thus, since Morse does not teach pins having contact surfaces in "an involute of a circle," it cannot render it obvious for one skilled in the art to provide the pin joints of Kanehira et al with "a locus of a contact position of the first pin and the second pin [which] is an involute of a circle," particularly where "a basic circle radius of an involute of the one of said two kinds of sets of pins is larger than a basic circle radius of an involute of the another of said two kinds of sets of pins."

In any case, the chain of Kanehira et al is designed to be wound around sprockets (col. 1, lines 12-13), not pulleys having sheave faces with conical surface shapes, as is now claimed. Such chains do not exhibit polygonal vibration, and so one skilled in the art would

not have been motivated to have adopted a design in which a locus of a contact position of the pins connecting the links of the chain is an involute of a circle, for reducing polygonal vibrations.

With respect to the rejections of dependent Claims 9-10 as being obvious over Kanehira et al in view of van Rooij et al or Mott, since the secondary references were cited only to teach the features of the dependent claims, and since these claims depend from Claim 1, it is respectfully submitted that all of the claims define over the cited prior art.

Applicants believe that the present application is in a condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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